

In-Line Coating Spurs Sheetfed

Flexo, metallics, fluorescents, and double-hits create a new generation of on-press special effects.

There's no respite in customer demand for gloss or matte coatings on multi-color sheetfed printing jobs. Now comes the next generation, a forceful drive by press manufacturers and OEMs to supply printers with new in-line coating technology that's integrated to the specific press line.

It's not enough to just coat a job for protection and high-gloss sheen. Such techniques as flexo-type spot coating in intricate patterns, intermediate ink sealing to allow for immediate coating in-line, and use of water-based metallic dispersion inks and fluorescents are some of the innovations being explored.

At the Drupa '95 exposition in Germany last month, Heidelberg displayed its MCT Multiple Coating Technology, MAN Roland demonstrated its Roland 700 double-coating module, and Printing Research Inc. introduced its Super Blue EZ interstation flexo printer/coater.

In addition, Mitsubishi Lithographic Presses, which has been

offering double coating for the past six years, developed a new in-line, anilox-engraved application roller for metallic inks as well.

Packaging printers have led the way, installing coating units as a standard part of the press. But commercial printers, seeking to entice high-end jobs from designers and ad agencies and enhance their value-added services, are now adding these in-line coating units as well.

Shortened lead times

"We're making the move into this new in-line, double-coating technology primarily because of our shortened lead times," comments Dave Rydell, printing manager for Diamond Packaging, Rochester, N.Y., which installed a new MAN Roland 700 with double coat in May.

He adds, "This press will allow us to almost simultaneously move a job from delivery to feeder and UV coat it all in line. We don't have the time to use off-line coating units and wait for the drying process."

While many consider the coaters to be aimed at a specialty market, their popularity cannot be contained to one certain niche.

"Lots of printers are showing interest in the technology. I had a printer who wanted to install three of our in-line, anilox-engraved application rollers immediately," remarks Randy Siver, Mitsubishi's sheetfed product manager.

Printing Research installed a prototype of its Super Blue EZ unit at a large commercial printer. After testing the printer/coater on its seven-color 40" sheetfed press, the printer placed an order for a production unit to be up and running this fall on the first printing unit of its even newer six-color press.

The Printing Research device is installed directly on one of the printing units for applying aqueous or UV-based metallic, opaque white, fluorescents, or specialized coatings, such as pearlescents, between units for downstream overprinting in a single pass.

"By using our flexo printer/coater, printers can lay down a metallic ink with a flexo unit at the beginning of the press, then take the job down through the press and enhance the image," explains Warren Bird of Printing Research. "The result can be very realistic or very surrealistic, depending on how and where the metallic effects are applied to the image, giving it a lot of walk-by appeal."

Bird reports that the printer/coater is receiving "tremendous reception" from printers of wine labels, greeting cards, fine-art reproductions, and specialty packaging. In conjunction with the unit, Printing Research is mar-

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By DEBORA TOTH
PROJECT EDITOR

keting both its cold UV and HV hot-air interstation and delivery drying systems. Both alleviate the problem normally associated with upfront in-line coating.

While this printer/coater fits at the front end of a press, Heidelberg's Multiple Coating Technology is installed at the back end. MCT provides package, label, and commercial printers with a way to produce high-gloss coatings, metallic finishes, and related special effects, while staying within the bounds of more stringent environmental regulations.

The system, available on new Speedmaster CD models with six or more printing units, consists of a coating tower, drying unit, second coating tower, and extended delivery. A combination of infrared dryers, hot-air knives, and UV curing systems are strategically placed throughout the press line to accommodate various coating materials.

In-line application

The configuration, which is also designated as L-Y-L, allows in-line application of two coatings in one pass. This provides more lustrous results and allows use of a virtually unlimited combination of UV and aqueous coatings, varnishes, and water-based metallic finishes.

Heidelberg's coating system is controlled by CPTronic, the digital press-operating system. The connection allows the press operator to adjust and activate the system's functions from a single console. Utilized is a unique roller configuration that minimizes the number of splits the coating must undergo before reaching the sheet. The result is a thicker, more uniform application by each of the two coating units.

"Multiple Coating Technology involves more than bolting coating towers onto a press," says John Dowe, Heidelberg USA's director of marketing for Speedmaster presses. "This is a bal-

Customer demand for gloss or matte coatings on multicolor sheetfed printing jobs remains high.

anced system of advanced application and drying technologies that provides a single-pass, environmentally friendly solution to a range of coating challenges."

These challenges might include application of a water-based primer over conventional inks, providing a stable base for a UV coating laid down in-line by the second coating unit.

Or the coater could provide more efficient production of water-based blister coatings without need for expensive off-line processing.

A third use is to offer a more dramatic use of spot dull and gloss UV coatings, which can be applied in line to provide dimensional effects and enhance rub resistance on a variety of printed products.

End of bronze age

Finally, the new in-line coater is a productive and less costly replacement for bronzing machines, whose use has become restricted by environmental concerns. The in-line sequence involves printing with conventional inks, use of spot metallic dispersion coating, and sealing with a gloss protective aqueous coating.

The first installation of a Hei-

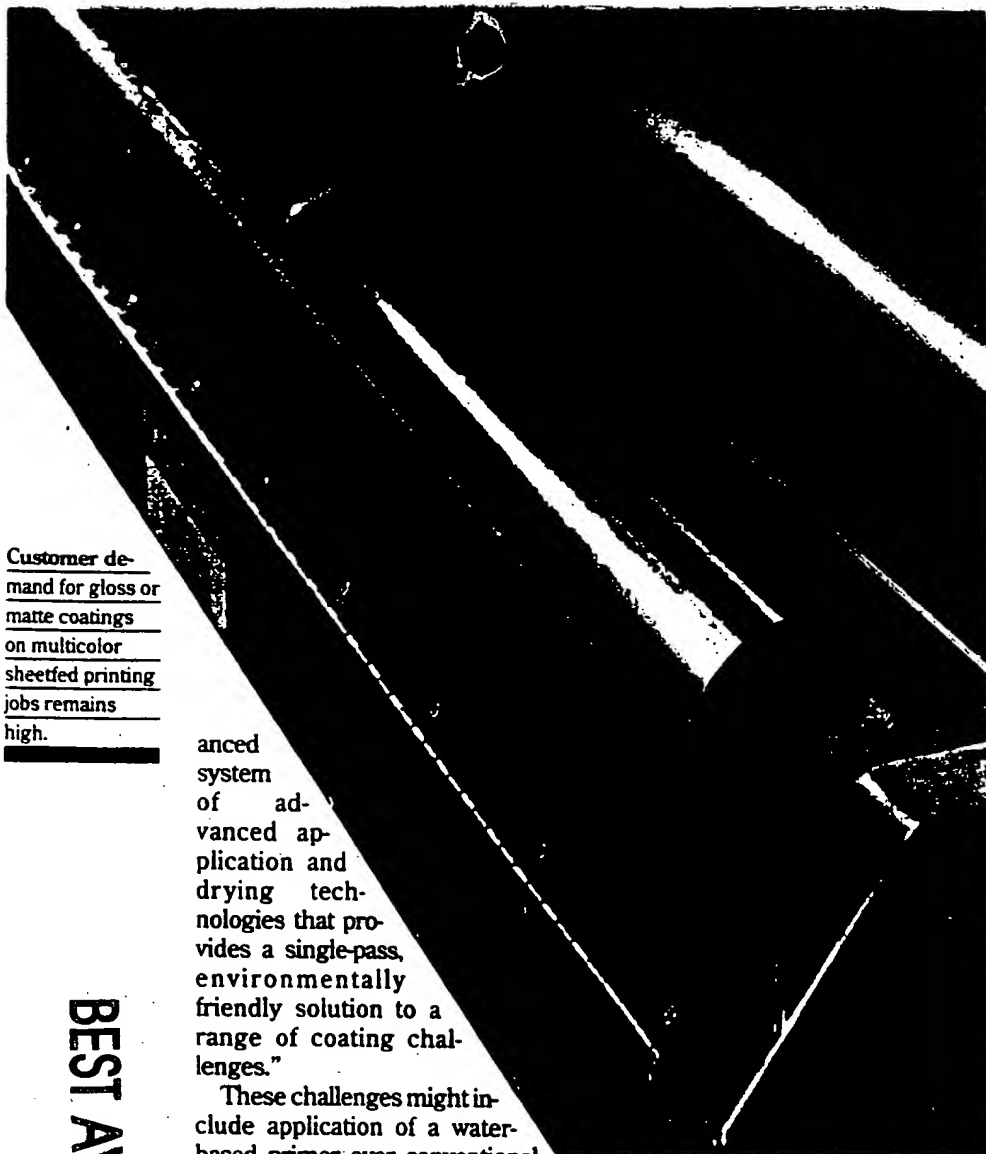
delberg 40" six-color Speedmaster CD equipped with Multiple Coating Technology was HM Graphics, a sheetfed printer in West Allis, Wis. specializing in intricate pop-up pieces, unusual packages and cartons, and special point-of-purchase displays. The press was installed in September 1994.

Jim Sandstrom, president of HM Graphics, says one of the greatest benefits of the new press is its ability to apply UV coating immediately after printing with standard intense bright inks. Until now, special dull inks had to be used when applying UV coating to a printed project. The new press has two drying units that make the process possible, he says.

This spring, Williamson Printing of Dallas took delivery of a six-color Speedmaster CD with MCT option, which joins a six- and a seven-color Speedmaster CD with in-line coating.

"In-line coating not only adds to

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Mark Kotowski

the appearance of our work," says Jesse Williamson, company president, "but its ink-sealing capabilities also allow us to turn jobs around faster. It's another value-added service we can offer our customers. The new Multiple Coating Technology makes it more viable than ever."

At the Drupa show, MAN Roland demonstrated the double-coating option for its model 700 sheetfed press. For the past year, the manufacturer has been presenting seminars across the country to introduce the new process, joined by supplier partners DuPont (plates), Grafix North America (dryers), and Hostmann-Steinberg (Huber inks), who worked with MAN Roland to develop the double-coating system.

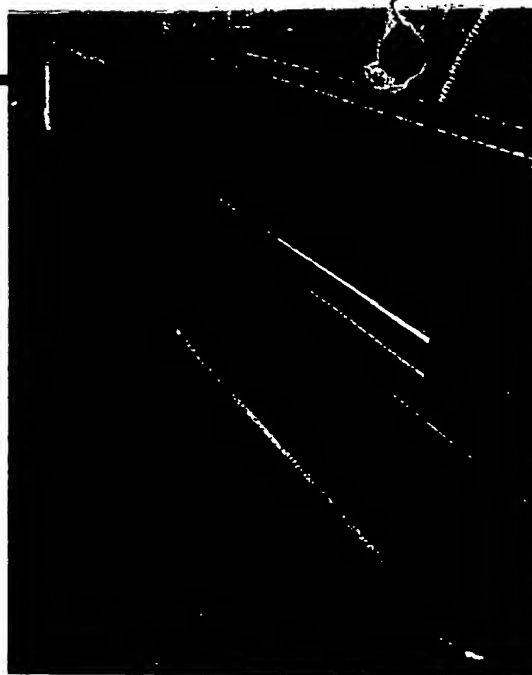
The MAN Roland system consists of twin high-tower coaters that let printers apply, in a single pass, high-quality metallic finishes, as well as double coating, such as a water-based primer plus UV blister packaging coats.

Ensures exact measuring

To maximize flexibility, the unit can be installed to operate as a two-roller nip coating system or as a chamber-type ductor blade and anilox roller. The latter option ensures exact metering of the coating, making for greater economy and accuracy in coating thickness, along with more even application and consistency even though the press speed or coating viscosity may fluctuate during the run.

The Grafix drying system speeds setting and drying without heating the substrate. Interstation warm and hot-air knives remove moisture from the sheet as it passes between the coating towers, and cold-air knives prepare it for the second coating.

Finally, an aqueous coating dryer or UV dryer is used on the sheet with cold-air knives to remove heat from the substrate for better control of pile temperatures.



Among the hot on-press trends: metallics, fluorescent, and double-hits.

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DuPont entered the double-coating development process by providing a new metal-backed photopolymer flexo plate, the Cyrel CL4 coating plate. These plates are designed to replace the expensive and time-consuming process of cutting press blankets on computerized plotters for spot coating.

Cyrel plates, which are plastic relief plates, are imaged photographically by exposure to a negative, followed by processing. The result is a reproduction of the film that can be mounted quickly into register. DuPont has offered to develop a "fingerprint" for each press to determine its exact imaging characteristics and variations.

By working with Hostmann-Steinberg, MAN Roland 700 users with double-coating technology can utilize the firm's new Acrylac acrylic-based metallic inks, which are formulations of gold and silver inks that use large pigment particles for added brilliance and easier application.

Acrylac inks applied in the coater may be able to replace some off-line foiling procedures with in-line metallic ink application.

The first two installations of MAN Roland 700 presses with double-coater system are Diamond Packaging, Rochester, N.Y., and Royal Paperbox, Los Angeles. Both were scheduled for late May.

"We're hoping that this new press with double coater will open the door into cosmetic and other high-end folding carton work," says Dave Rydell of Diamond

Packaging. "We've been experimenting in the past with in-line aqueous coatings on our presses but they never gave us the high gloss we needed."

Rydell says the first use for the new double coater is to lay down primer and top coat of aqueous coating in line. "Since we did have UV coating capabilities before, this coater has an anilox roller that we can utilize to do our clients in-line metallic ink coating for less cost," he says. "Another plan is to do combination coating jobs, such as laying down a matte finish with water-based coating, then spot coating with UV coating."

Replaces bronzing process

In the meantime, Mitsubishi Lithographic Presses, working with a vendor, has developed its own in-line, anilox-engraved application roller, which can be used to replace the bronzing process. The in-line unit is followed by a tower coater and an extended delivery for curing opaque inks.

The unit, built specifically for one customer, is being field tested before being marketed to the industry in general. It should be up and running in the fall.

"Typically, when applying metallics you get no clear definition of the trap line," explains Siver Mitsubishi. "But this process puts a heavy ink film on the substrate making it a cleaner trap. Printers are looking for a more metallic glossier, shinier look."

While printers investigate these new in-line coaters, rumors have it that additional manufacturers will be soon introducing new products. Regardless of whether they serve the packaging or commercial markets, printers who choose coating will be able to further enhance and differentiate themselves from the competition.

Coating technology is becoming a fundamental component of the offset printing process.